

7. (Three times amended) A deep desulfurization process which comprises removing sulfur oxides by using a hydrophobic heat-treated active carbon fiber, wherein said heat-treated active carbon fiber has been obtained by heat-treating a starting active carbon fiber in a non-oxidizing atmosphere, thereby rendering said heat-treated active carbon fiber hydrophobic, wherein said removal of sulfur oxides occurring on the downstream side of a desulfurization apparatus based on the lime-gypsum method.

39. (Amended) A desulfurization process which comprises bringing a gas containing SO<sub>2</sub>, water, and oxygen into contact with a hydrophobic heat-treated active carbon fiber wherein said heat-treated active carbon fiber has been obtained by a process consisting essentially of heat-treating a starting active carbon fiber in a non-oxidizing atmosphere, thereby rendering said heat-treated active carbon fiber hydrophobic.

40. (Amended) A deep desulfurization process which comprises removing sulfur oxides by using a hydrophobic heat-treated active carbon fiber, wherein said heat-treated active carbon fiber has been obtained by a process consisting essentially of heat-treating a starting active carbon fiber in a non-oxidizing atmosphere, thereby rendering said heat-treated active carbon fiber hydrophobic, wherein said removal of sulfur oxides occurring on the downstream side of a desulfurization apparatus based on the lime-gypsum method.

47. (Amended) A desulfurization process which comprises bringing a gas containing SO<sub>2</sub>, water, and oxygen into contact with a heat-treated hydrophobic active carbon fiber wherein said heat-treated active carbon fiber has been obtained by heat-treating a starting active carbon fiber in a non-oxidizing atmosphere, wherein said heat-treating further comprises heat-treating for about an hour, wherein said desulfurization process occurs between about 20°C to about 100°C at a gas flow rate in the range of about  $1 \times 10^{-3}$  to about  $5 \times 10^{-3}$  g-min/ml per unit weight of said active carbon.

48. (Amended) A deep desulfurization process which comprises removing sulfur oxides by using a heat-treated hydrophobic active carbon fiber, wherein said heat-treated active carbon fiber has been obtained by heat-treating a starting active carbon fiber in a non-oxidizing atmosphere, wherein said heat-treating comprises heating at a temperature of

600 to 1,200°C in a non-oxidizing atmosphere, wherein said removal of sulfur oxides occurring on the downstream side of a desulfurization apparatus based on the lime-gypsum method, wherein said heat-treating further comprises heat-treating for about an hour, wherein said desulfurization process occurs between about 20°C to about 100°C at a gas flow rate in the range of about  $1 \times 10^{-3}$  to about  $5 \times 10^{-3}$  g-min/ml per unit weight of said active carbon.

Please add the following new claims:

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53. (New) The process of claim 7, wherein said heat-treating comprises heating at a temperature of 600 to 1,200 °C in a non-oxidizing atmosphere.

54. (New) The process of claim 39, wherein said heat-treating comprises heating at a temperature of 600 to 1,200 °C in a non-oxidizing atmosphere.

55. (New) The process of claim 40, wherein said heat-treating comprises heating at a temperature of 600 to 1,200 °C in a non-oxidizing atmosphere.

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### **REMARKS**

#### **I. INTRODUCTION**

Receipt of the Office Action of September 26, 2002 is acknowledged. Claims 31-38 have been canceled without prejudice or disclaimer. The cancellation of claims does not constitute acquiescence in the propriety of any rejection or objection set forth by the Examiner. New claims 53-55 have been added. Support for the new claims is found generally throughout the specification, and e.g., page 6, line 15. The amendments do not raise any new issues nor introduced new matter. The feature of "hydrophobic" added to claims 6 and 7 is found in claims 35 and 36. Thus, this feature has already been considered by the Examiner. New claims 53-55 merely provide the temperature feature of claims 7, 39 and 40 in dependent form.

Claims 6, 7, 20-30 and 39-55 will be pending upon entry of the amendments to the claims.